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"Breastfeeding Perceptions and Practices" A Comparative Study of Two Opposing Socio-Economic Level Quarters within Yaoundé, Cameroon

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SIT Study Abroad

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Abstract

This research project aims to identify and analyze the conditions that influence breastfeeding perceptions and practices within two opposing socioeconomic level quarters of Yaoundé, Cameroon: Bastos and Madagascar. According to the World Health Organization recommendations for optimal infant and young child nutrition, mothers are advised to exclusively breastfeed for the first six months of life after birth before introducing complimentary feeding. Cameroon since 2005 has adhered to the International Code of Marketing of Breastmilk Substitutes. It is classified as a Category 1 as a country which discourages commercial pressures to feed alternative forms of nutrition known as breastmilk substitutes.

This four-week case study utilizes the demographic and behavioral information of fifty mothers with six in-depth follow-up interviews to begin to understand local realities in relation to exclusive breastfeeding, mixed feeding, and breastmilk substitutes.

Further discussions with healthcare professionals of the Chantal Biya Foundation, the Deputy Director for Food and Nutrition at the Ministry of Public Health, the Food and Nutrition Officers at both the United Nations Children's Fund and World Health Organization, as well as several informal conversations in the community demonstrate the influence of national and international organizations on the breastfeeding decisions of mothers.

Ce projet de recherche vise à identifier et analyser les conditions qui influencent la perception et les pratiques de l'allaitement dans deux quartiers de niveau socio-économiques opposés de la ville de Yaoundé au Cameroun: Bastos et Madagascar. Selon les recommandations internationales pour l'alimentation optimale du nourrisson et du jeune enfant, il est conseillé aux mamans de pratiquer l'allaitement maternel exclusif pendant les six premiers mois de la vie après la naissance avant d'introduire les substituts du lait maternel. Le Cameroun depuis 2005 a adhéré au Code International de Commercialisation des Substituts du Lait Maternel. Il est classé dans la Catégorie 1 C'est-à-dire les pays qui encouragent le moins l'utilisation des substituts du lait dans l'alimentation de l'enfant.

Cette étude de cas s'est déroulée sur quatre semaines. Elle s'est déroulée en deux étapes. Premièrement un questionnaire a été adressé à cinquante mères de deux quartiers différents dans le but d'étudier leurs connaissances et leurs pratiques sur l'allaitement maternel. Secondement six interviews ont été réalisées visant à identifier et à comprendre les réalités locales par rapport à l'allaitement maternel et les substituts du lait maternel.

Par ailleurs des discussions avec les professionnels de la santé de la Fondation Chantal Biya, le sous-directeur pour l'alimentation et la nutrition au Ministère de la Santé Publique , les agents de l'Alimentation et nutrition à la fois du Fond des Nations Unies pour l'Enfance et l'Organisation Mondiale de la Santé, ainsi que plusieurs conversations informelles dans la communauté ont démontré l'influence des organisations nationales et internationales sur les décisions des mères par rapport à l'allaitement maternel.

Introduction

Where there are mothers and offspring, there will be a universal demand for infant and young child nutrition. Breastfeeding is the primary means of meeting that biological and psychological requirement for improved prospects of growth and maturation in the postnatal period.[1] Despite the valuable contributions of breastmilk not every mother utilizes the natural resource to nourish her children. According to statistical data from 2009, approximately 35 percent of women worldwide exclusively breastfed (EBF) for the first six months postnatal between the years of 2000 to 2007[2]. Often socio-economic, political, physiological, religious, physical, and other overarching contexts uncovered globally can hinder breastfeeding perceptions and practices.

Every environment is unique in relation to each local reality towards the beliefs and habits maintained by mothers internationally. There are common themes worldwide with certain distinctions according to location and population. Cultural relativism is a significant factor and that is why to begin to understand this subject, observations and consequential data collection are necessary through case studies with regard to preceding research. Cameroon is the selected country for this project in relation to established international definitions of recommended optimal breastfeeding customs. Specifically two perceived opposing socio-economic level quarters located within the capital of Yaoundé were observed, researched, examined, and analyzed. The chosen quarters were Bastos and Madagascar.

Before examining these circumstances that mold the framework of beliefs and habits in the two quarters of Cameroon, it is essential to first understand the scientific discourse behind breastfeeding as a biological mode of young child and infant nutrition.

Colostrum is a pre-milk fluid (also referred to as the first milk) produced in the mammary glands of the female breasts.[3] This solution is full of essential immunoglobulins (antibodies) including IgM, IgG, IgA, and secretory IgA for combating infections faced by the human body.[4]

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[1] Diane Bolton. *Breastfeeding Perceptions and Practices: Cameroon.* Yaoundé, 1996.
[2] "Infant and Young Child Feeding (2000-2007)," *STATISTICS BY AREA/Child Nutrition.* United Nations Children's Fund (UNICEF), January 2009, http://www.childinfo.org/breastfeeding_countrydata.php (Accessed December 1, 2013).
[3] Beth M. Ley, *Colostrum: Nature's Gift to the Immune System.* (Detroit Lakes: BL Publications, 2000), 17.
[4] Id, 30.

The various immune enhancing components of colostrum aid in defending the body from allergies, arthritis, asthma, cancer, diabetes, intestinal disorders, heart disease, and an array of other maladies.[5] Colostrum is decreasingly present in the transitional milk accessible for about the first 2-3 days until the mature breastmilk is produced, and thus optimally it is vital to begin breastfeeding through proper lactation within the initial hour after birth while there are a high percentage of antibodies within the fluid content. The production of the breastmilk is initiated and promoted through the suckling motion of the infant. In addition, these first few moments of breastfeeding foster the mother-to-child connection and intimate bond that helps to prevent postpartum depression.[6]

Following the allocation of colostrum via the mother milk, exclusive breastfeeding is recommended for the first six months of life after birth "to achieve optimal growth, development and health."[7] During this period, optimally human breastmilk is uniquely provided whilst "no other liquids or solids are given – not even water – with the exception of oral rehydration solution, or drops/syrups of vitamins, minerals or medicines" from the mother to the infant.[8] A major health benefit is the formation of a resilient immune system towards the protection of common young child infections and diseases such as diarrhea and pneumonia. The practice "may also have longer-term benefits such as lowering mean blood pressure and cholesterol, and reducing the prevalence of obesity and type-2 diabetes."[9] Overall proper administration of breastmilk encourages a potential reduction of morbidity and mortality for the offspring through increased immunological defenses and improved child nutritional status.

However with each generation traditional methods of treating infant and young child nutrition, such as breastfeeding, have been compromised by new, alternative technologies. Despite the past trend of decreasing breastfeeding practices, there have been major strides within the last forty years to increase those rates through the promotion of optimal practices and educational awareness, for instance with the creation of the World Breastfeeding Week. Therefore the relevance of this project is universal. A recent study examines how, "an estimated 1.3 million lives are lost each year due to inadequate exclusive breastfeeding and another 600

[5] Ibid.
[6] *Le Conseil en Allaitement: Cours de formation.* World Health Organization (WHO) and the United Nations Children's Fund (UNICEF).
[7] Ley, 30.
[8] "Breastfeeding – exclusive breastfeeding," *Programmes and projects.* World Health Organization (WHO), 19 August 2013, http://www.who.int/elena/titles/exclusive_breastfeeding/en/ (Accessed November 18, 2013).
[9] Ibid.

thousand from lack of continuation of breastfeeding with proper complementary feeding."[10] Women allot breast milk substitutes (BMS), including artificial milk and infant formula, as an alternative form of feeding offspring rather than practicing exclusive breastfeeding within the first six months of life postnatal. This practice does not provide the optimal conditions for the immune system to combat pathogens in comparison to exclusive breastfeeding and can often increase the danger to the child through unsterile bottle conditions or unhygienic food preparation.

Infants and young children are vulnerable populations that are susceptible to a range of conditions such as the common cold to HIV through an overwhelmed immune system developed from an exposure to increased toxins including pesticides within water and food, polluted air, and other unhygienic environmental conditions. The scarcity in optimal breastfeeding practices is only exacerbating the issue of malnutrition and immunodeficiency.

To hinder misguided replacement of breastmilk through the influence of infant formula and other BMS corporation advertisements, the International Code of Marketing of Breastmilk Substitutes was created by the World Health Assembly (WHA). The International Code is a series of established recommendations to "protect and promote breastfeeding" from corporate pressures to purchase BMS rather than EBF.[11] According to the State of the Code by Country (2011) Cameroon implements "all or nearly all provisions law" of the International Code. Cameroon is ranked a Category 1 (highest category) while the United States, in comparison, is ranked as a Category 9 (lowest category) due to "No information/no action."

In theory there would be a high percentage of women breastfeeding with little to no pressure from BMS advertisements in the country due to the status of Cameroon as a Category 1 since the creation of the national code in 2005. Cameroon became an ideal state to investigate breastfeeding perceptions and practices in a world where EBF has appeared to diminish among generations of mothers, especially within the United States of America. This speculation led to the creation of the first research question when formulating the research project centered on breastfeeding perceptions and practices: Since Cameroon is ranked as a Category 1 in adherence

[10] "What are the Challenges." *The Big Picture*, United Nation's Children Fund (UNICEF), 6 May 2003, http://www.unicef.org/nutrition/index_challenges.html (Accessed December 1, 2013).
[11] "How Breastfeeding is Undermine." International Baby Food Action Network (IBFAN), 2013, http://ibfan.org/the-issue (Accessed November 18, 2013).

to the International Code of Marketing of Breastmilk Substitutes; will there be a low frequency of breastmilk substitutes before infants are six months of age postnatal? The corresponding hypothesis states: Cameroonians in both neighborhoods will have no or minimal frequency of using breastmilk substitutes before infants reach six months of age postnatal.

However breastfeeding perceptions and practices cannot solely be determined according to national regulations established to uphold international recommendations, particularly in such a widely diverse country as Cameroon. Therefore demographic disparities, such as the affects of socioeconomic status, must be investigated and examined to understand the related influences on actual behaviors. Thus, the second research question formulated asked: Do households of a lower socioeconomic level have less financial resources to purchase breastmilk substitutes? Provided that individuals who have minimal incomes have the tendency to prioritize necessities for daily survival, it is reasonable to presume that a mother facing financial hardships would choose to use a priceless natural resource such as breastmilk to feed her offspring. Comparatively a mother of a wealthier status may have the funds if she chooses to support purchasing breastmilk substitutes. In consequence, the corresponding hypothesis states: Lower socio-economic level correlates with a higher frequency of exclusive breastfeeding for the first six months of life postnatal compared to a higher socioeconomic level.

It is necessary to execute research concerning perceptions and practices for breastfeeding within Cameroon despite the uppermost state ranking. The Ministry of Public Health stated that approximately 97.4 percent of women countrywide breastfeed according to the national Demographic Health Survey from 2011.[12] In spite of this apparently high number, that translates as out of a population of 20,129,878 (July 2012 est.) roughly 523,378 women are not breastfeeding.[13] This fraction of women is not taking advantage of breastmilk as an organic solution of nutrients and antibodies produced by their bodies specifically to nourish offspring. In addition, only 20 percent of infants are exclusively breastfed for the first six months after birth.[14] Hence the existence of certain determining factors are influencing women to stop breastfeeding their children exclusively and instead, provide other alternative forms of nutrition prematurely. As a result the health of younger and future generations becomes problematic.

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[12] Demographic Health Survey 2011. Ministry of Public Health. September 2012, 168.
[13] *Cameroon Demographic Profile.* CIA World Factbook, 21 February 2013, http://www.indexmundi.com/cameroon/demographics_profile.html (Accessed November 25, 2013).
[14] World Health Organization (WHO). 2012, http://apps.who.int/gho/data/view.main.NUT1730?lang=en (Accessed November 25, 2013).

Therefore in terms of international, national, and community level development, it is essential to promote optimal breastfeeding practices to facilitate the formation of healthier generations. Reform can only be accomplished by understanding the foundation of the issue and working towards a solution that is sensitive to the cultural context.

Methodology

Site Selection

The main objective of the independent research project was to determine and identify the perceptions and practices of breastfeeding with respect to local realities. Cameroon is the home to an estimated 200 plus ethnic groups where "each region demonstrates its own values and tendencies that influence" infant and young child nutrition.[15] To survey all variances of breastfeeding mentalities and habits within multiple cities would have been extremely difficult. Therefore I selected Yaoundé as the site for my independent research project, the capital of the country. As a result, I had access to a highly diverse population within closer proximity, an advantage for a study with a brief designated four-week period for data collection and presentation. In addition, the capital is the primary location of all major ministries, non-governmental organizations, and health facilities. In consequence Yaoundé is an ideal setting in theory for women and other individuals interested in breastfeeding to receive education, financing, and various resources if needed.

Surveyed Population

The target population for the transversal study was mothers of Yaoundé. Due to the previously mentioned time constraint, only two quarters rather than all local neighborhoods of the capital were observed, researched, and analyzed through extensive field research. Investigations were conducted within a perceived relatively low socio-economic quarter, Madagascar, and a relatively high socio-economic quarter, Bastos. The selected sample group was fifty households divided equally into sets of twenty-five for each of the two surveyed areas.

Through a previous research project concerning another public health area of interest in the two locations, I observed and began to learn about how the diversity of the physical

[15] Bolton, 2.

environment, education levels, family sizes, occupations, salaries, and other factors influences lifestyle behaviors. These pertinent variables within the two populations are significant but for purpose of analysis, the focus of my second research question and hypothesis is the role of socio-economic level on breastfeeding perceptions and practices. Identifying opposing socio-economic level quarters in my research helps to ensure diversity yet tangible results.

Madagascar is a quarter situated in the northwest section of Yaoundé, an urban area of spontaneous development commonly noted as a "shantytown." Residences are densely compacted within a maze of narrow dirt walkways. These homes consist of crudely built structures typically of corrugated metal, wood, and rammed-earth. There is a lack of infrastructure to support hygienic conditions, proper sanitation, drainage systems, and other basic human provisions for healthy living. As with most informal settlements there are also sections of the neighborhood that are more developed and maintained than others, including access to electricity.

Bastos, located in the upper northwest section of Yaoundé, is a considerably more spacious quarter in comparison due the appearance of carefully planned plotting. Residents inhabit multi-story mansions within gated dwellings protected by canines and uniformed security guards. Amid the sprawling manicured grounds, one can locate an array of embassies and other sanctioned governmental headquarters. However, there are areas of Bastos where the hills descend into assorted basins hosting minute communities of extreme poverty. These inhabitants live side-by-side to the higher income populations.

Conditions

Participation for the study was selected through the following conditions. Firstly, the woman must be a mother. Secondly, this mother had to be currently residing in either Bastos or Madagascar at the time of the study. Thirdly, she had to verbally accept to complete the responses to survey questionnaires and if applicable, the orally conducted interviews. Only six women, three for each quarter, were chosen for the follow-up interviews for further discussion. These women were chosen according to interest in participation and if they had been mothers for at least one year.

Data Collection

The procedure was clear and concise. For the designated initial week of the independent research project, I visited the two quarters to meet, distribute, and collect fifty questionnaires from each informant residing in the surveyed areas. I would approach the neighborhood and beginning knocking door-to-door to explain and offer the study to those individuals interested. At this time, I would introduce who I am, my line of study, the institution I represent (*The School for International Training, SIT*), the purpose of my questionnaires, and lastly an overview of the Code of Ethics associated with participation in the study. If the woman fit the prerequisites and wished to complete the questionnaire at that moment, I would inquire if I could remain with her while she wrote her responses to ensure she understood how to reply to the survey questions. Therefore informant selection was based on a convenience sample which agreed to participate in study while meeting the criteria of my predetermined conditions.

Supplementary sites of research were utilized to identify influences of breastfeeding perceptions and practices at the international, national, and community levels. To understand the origin of international definitions and recommendations for breastfeeding implemented in Cameroon, I conversed with two non-governmental organizations, the World Health Organization (WHO) and the United Nations Children's Fund (UNICEF). Dr. Jeanne Ejigui, a Nutrition Officer, from the latter organization was formally interviewed. However both associations continue to work closely with the Ministry of Public Health. Therefore I also met with two officials, George Okala and Marlyse Mahamat, from the ministry to discuss national policies and campaigns. To see if these strategies were being efficiently applied in a local clinical setting I chose the largest national hospital, which is favorably situated close to both Madagascar and Bastos. The Chantal Biya Foundation at the Yaoundé Central Hospital was a clear choice after I informally discussed with women to learn that it is the premier health facility for mothers, infants and young children in Cameroon. It was here that I interviewed the Nursing Coordinator and *Major Soins Maternelle*.[16]

Previous to the designated time for research I collected a selection of preliminary pilot findings. Throughout my duration in Cameroon I conducted several informal conversations and observations that established the groundwork for this project. I spoke with two midwives from

[16] Translation from French to English: Maternal Care Medical Officer

the regional hospitals at respectively Dschang and Ngaoundéré. Each woman explained the scientific aspect of breastfeeding versus alternatives with similar terminologies and context that I heard through my Western education of this subject.

As a whole most women breastfeed nationally but from what I gathered through the conversations, the practice is often mixed with alternatives whether that be artificial milk, water, or household foods. Major factors affecting the decision to exclusively breastfeed are education, the influence of kinship, and the health status of the mother. It is an issue concerning local realities and cultural relativism. Nonetheless numerous women have been observed in Yaoundé, Ngaoundéré, Dschang, Batoufam, Kribi, and other locations of Cameroon breastfeeding publicly. In addition, breastfeeding is widely depicted through traditional and modern artwork within the country.

Ethics

Ethical concerns and human subject considerations were carefully taken into account. Prior to conducting my investigation, I received intensive education in a research methods and ethics course qualified through *The School of International Training*. At the conclusion of the program, I received the permission of my school through the academic director, Christiane Magnido, to conduct research and interviews for my project. The International Review Board (IRB) certification of both *SIT* and my home university in the United States, *Syracuse University*, provided my instruction on following the Code of Ethics.

Before involvement in the study, each individual received an oral explanation about the guaranteed protection of their privacy, confidentiality, and anonymity of their respective personal information. For clarification and ethical purposes, this explanation was reiterated in word on the questionnaire and verbally before participation in the interview process. No personal information was utilized for the study without verbal or written consent previous to data collection. Data that would put the subject at any potential risk has and will continue to be guarded and not included in public documents. All information is coded, stored, and protected electronically on my computer. Any hard copies will be secured in a relatively safe location that only I will be able to access.

To further insure the legitimacy of my work and to demonstrate that I have taken the necessary steps to validate my studies, I sought and received the verbal as well as the written approval, through the creation of authorization forms, of the *Chef de Quartier*[17] from both Madagascar and Bastos to conduct my research with the populations of those respective areas. A letter of request was created and approved by the director for Chantal Biya Foundation at the Yaoundé Central Hospital. Finally all data collection was acutely supervised by a Cameroonian gynecologist working at Hôpital Général named Dr. Anny Ngassam, my project advisor as approved by the current academic director of SIT.[18]

Grouping of Data

After the data was collected from the fifty questionnaires and nine formal interviews, I coded and graphed the information from the target population according to the major patterns I discovered in the data. For graphing the percentage of professions and the consequential influence on breastfeeding habits, I had to create broader categories for the assortment of occupations with the assistance of my project advisor due to the variety of answers received for that response of the questionnaire. Ranges for ages and salaries were also created to group together similar data for a clearer visual representation of my findings as explained in the "Results" section of the report.

Limitations

The implementation of my research and the results obtained are satisfactory under the given time parameters yet I faced major impediments. I was confined through various biases, restrictions, and challenges. One of these restrictions was the language barrier. I am not a native speaker of French or other local dialectics. Therefore my ability to communicate with mothers and other informants was hindered by my knowledge of the vernacular. Another reality is that I am not a mother, which means that I have never had the chance to experience breastfeeding personally. Therefore I can believe that there are ideal practices but I must understand local realities for mothers. It is not my place to educate but to simply listen and learn. In addition I am from the United States and therefore, I realize unintentionally or perhaps consciously I may have identified perceptions or practices of breastfeeding differently in my observations in comparison

[17] Translation from French to English: Chief of the Quarter
[18] Translation from French to English: General Hospital

to an individual who has lived in Cameroon. Lastly, the allocated four-week research period has severely restricted me from choosing a larger and more diverse population to acquire more accurate information. Therefore all of my findings have been generalizations derived from the collected data of the sample groups and thus indicating that the information cannot represent the entire community.

A major strength that I experienced was the promptness of all parties involved to participate and assist with the project. At times I would initially approach individuals and they would appear cautious and reserved, especially in Bastos where I would often speak with security guards before the actual resident. However after I would describe my role as a researcher of infant and young child nutrition, women and men alike would become receptive to participating in the breastfeeding study.

Results

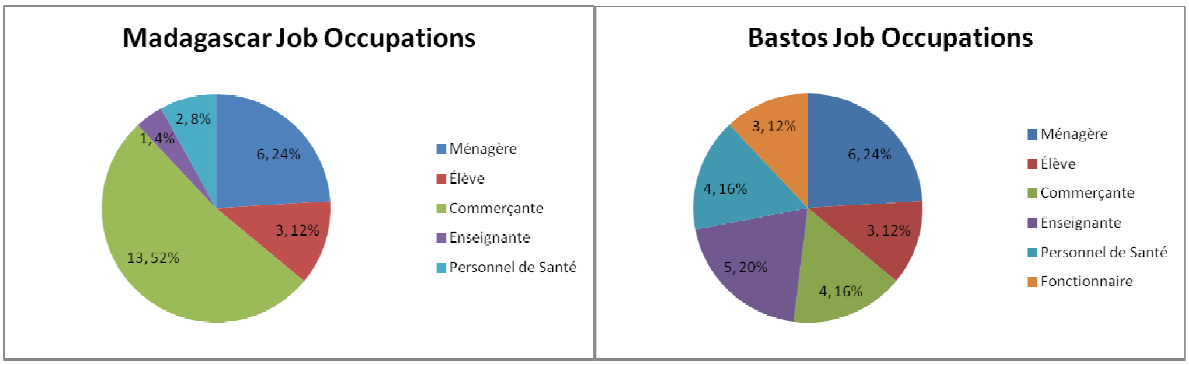
After distributing, discussing, and collecting the questionnaires in both quarters I realized that my perceived notions of the two areas as opposing socioeconomic populations were fairly accurate. Bastos had an average monthly income at approximately 202,700 FCFA and 63,800 FCFA for Madagascar.[19] However the sample group had outliers that decreased the average salary for Bastos and increased the average for Madagascar (as illustrated by the range). The following data separates the data collection according to the salary range, median, mode, and mean according to each quarter.

Quarter / Salary	**Range (FCFA)**	**Median (FCFA)**	**Mode (FCFA)**	**Mean (FCFA)**
Madagascar	15,000 – 351,000	30,000	15,000	63,800
Bastos	17,500 – 351,000	225,000	351,000	202,700

Professions were miscellaneous and thus, the collected data has been coded into several categories. For both populations the following occupations are classified as *élève, commerçante, ménagère*, *enseignante*, and *personnel de santé; fonctionnaire* is only utilized for the Bastos population.[20] The following pie charts illustrate the percentage per population:

[19] 500 Central African Franc (XAF aka FCFA) ≈ 1.03 United States Dollar (USD aka $)

[20] *Élève: élève/*student*/stagiaire*
Commerçante: commerçante/coiffeuse/couturière/revendeuse/petit business/footballeuse/décoratrice
Ménagère: ménagère/chômage



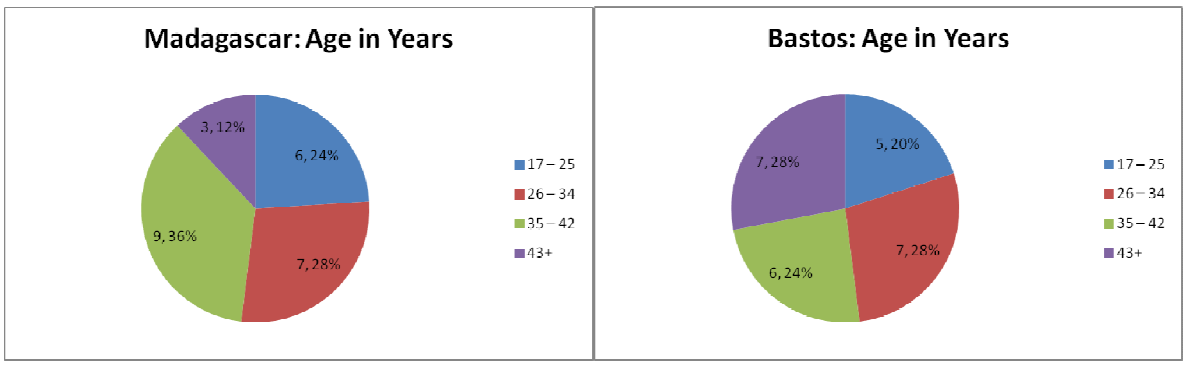
According to the figures and analogous coding, more than half the population at 52 percent of the surveyed mothers of Madagascar works as a *commerçante*, or in other words some variety of the trade profession; whereas the same category of profession is merely 16 percent in the Bastos group. The *élève* (student) and *ménagère* (housewife) categories remained consistent for each quarter. However, job occupations in the *personnel de santé* (medical workers) and *enseignante* (teacher) groupings were identified more frequently in the Bastos population compared to the Madagascar population. *Fonctionnaire*, some form of civil service occupation, had to be included to represent the 12 percent of the Bastos surveyed mothers.

For marital status the following table as the information for the two quarters:

Quarter/Marital Status	Single	In a Relationship	Married	Widow
Madagascar	48% (12/25)	24% (6/25)	28% (7/25)	0% (0/25)
Bastos	32% (8/25)	16% (4/25)	48% (12/25)	4% (1/25)

A majority of the surveyed women in Bastos are currently married while the same percentage represents the single mothers living in Madagascar.

Age is represented by the following pie charts for each quarter:



Enseignante: enseignante/professeur
Personnel de Santé: médecin/infirmière/orthophoniste
Fonctionnaire: secrétaire de direction/cadre d'entreprise/personnel assistante

As shown by the charts, the Madagascar has a comparatively younger population than the Bastos surveyed population of mothers. For the former only 12 percent of the sample group is over the age of 43 years while in the latter the percent is more than doubled at 28 percent.

The collected data revealed that 98 percent (49 of the 50 women) of the surveyed population breastfed according to the affirmative response to question 4 of the questionnaire (see Appendix). This number is in correlation with the 97.4 percent national average and it is higher than the 94.3 percent calculated for the city of Yaoundé in 2011. [21] In addition every woman who participated in the survey affirmed that she fed her child colostrum (question 4D).

All mothers who breastfed chose to do so for each child, producing a 100 percent frequency according to questions 3 and 4A. This information was deduced by taking the number of infants breastfed divided by the sum number of birthed children by the mother (and multiplied by one hundred) to create a percentage per participant. The total amount of women within the sample group who exclusively breastfed their offspring for the first six months after birth is 44 percent (question 4C). However once I focused on specific quarters, I realized approximately 28 percent of women living in Bastos exclusively breastfed for the first six months while in Madagascar 60 percent of women executed this practice.

These numbers were further examined according to age, profession, and salary for each quarter:

Key: EBF: Exclusive Breastfeeding, MBF: Mixed Breastfeeding, NBF: No Breastfeeding

Madagascar:

Age (Years)	17 – 25 (6)	26 – 34 (7)	35 – 42 (9)	43 + (3)	Total (25)
EBF (%)	33% (2/6)	57% (4/7)	89% (8/9)	33% (1/3)	60% (15/25)
MBF (%)	67% (4/6)	43% (3/7)	11% (1/9)	67% (2/3)	40% (10/25)
NBF (%)	0	0	0	0	0% (0/25)

Profession	Ménagère (6)	Élève (3)	Commerçante (13)	Enseignante (1)	Personnel de Santé (2)
EBF (%)	83% (5/6)	33% (1/3)	62% (7/13)	0% (0/1)	50% (1/2)
MBF (%)	17% (1/6)	67% (2/3)	38% (5/13)	100% (1/1)	50% (1/2)
NBF (%)	0	0	0	0	0

[21] Demographic Health Survey. 2011.

Salary (FCFA)	- 15,000 (4)	15,000-40,000 (10)	41,000-80,000 (5)	81,000-150,000 (4)	151,000-250,000 (1)	251,000-350,000 (0)	351,000+ (1)
EBF (%)	75% (3/4)	60% (6/10)	60% (3/5)	75% (3/4)	0% (0/1)	0	0% (0/1)
MBF (%)	25% (1/4)	40% (4/10)	40% (2/5)	25% (1/4)	100% (1/1)	0	100% (1/1)
NBF (%)	0	0	0	0	0	0	0

Bastos:

Age (Years)	17 – 25 (5)	26 – 34 (7)	35 – 42 (6)	43 + (7)	Total (25)
EBF (%)	60% (3/5)	14% (1/7)	17% (1/6)	29% (2/7)	28% (7/25)
MBF (%)	40% (2/5)	86% (6/7)	66% (4/6)	71% (5/7)	68% (17/25)
NBF (%)	0	0	17% (1/6)	0	4% (1/25)

Profession	Ménagère (6)	Élève (3)	Commerçante (4)	Enseignante (5)	Personnel de Santé (4)	Fonctionnaire (3)
EBF (%)	17% (1/6)	33% (1/3)	50% (2/4)	0% (0/5)	25% (1/4)	67% (2/3)
MBF (%)	83% (5/6)	67% (2/3)	50% (2/4)	100% (5/5)	50% (2/4)	33% (1/3)
NBF (%)	0	0	0	0	25% (1/4)	0

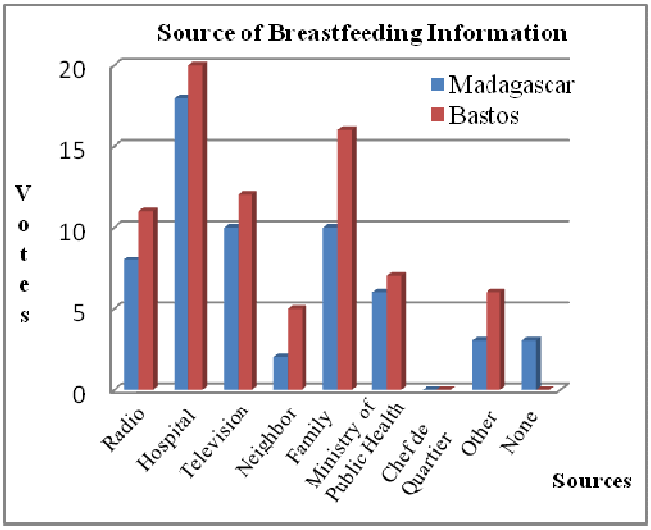
Salary (FCFA)	- 15,000 (0)	15,000-40,000 (2)	41,000-80,000 (5)	81,000-150,000 (4)	151,000-250,000 (4)	251,000-350,000 (4)	351,000+ (6)
EBF (%)	0	0% (0/2)	40% (2/5)	75% (3/4)	25% (1/4)	0% (0/4)	17% (1/6)
MBF (%)	0	100% (2/2)	60% (3/5)	25% (1/4)	75% (3/4)	75% (3/4)	83% (5/6)
NBF (%)	0	0% (0/2)	0% (0/5)	0% (0/4)	0% (0/4)	25% (1/4)	0% (0/6)

The highest percentage for women who exclusively breastfeeding is 89 percent for the 35-42 age group in Madagascar whereas it is 60 percent for the 17-25 age group in the Bastos population. For mixed feeding, the 17-25 and the 43+ age brackets are equivalent at 67 percent in Madagascar; in comparison the highest percentage is at 86 percent for the 26-30 age group in Bastos.

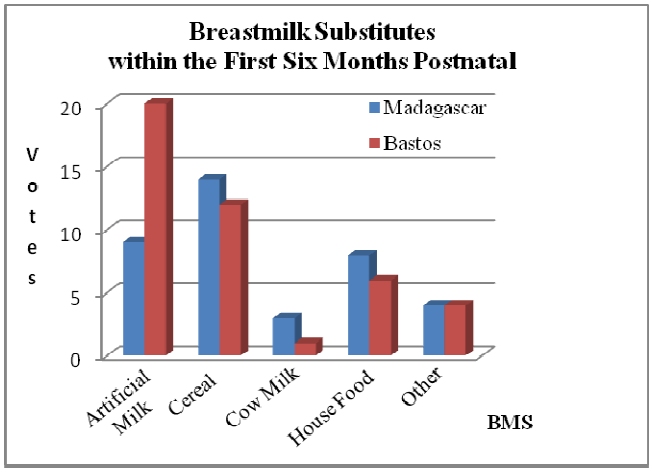
For profession, it is the *ménagère* category that has the highest rate of exclusive breastfeeding at 83 percent for Madagascar and *fonctionnaire* at 67 percent for Bastos. The lowest rate of EBF is for the *enseignante* occupation at 0 percent for both quarters.

When the salaries are compared to breastfeeding habits, there is a substantial trend according to the percentages illustrating the preference of mixed feeding by participants with higher incomes (over 150,000 FCFA) rather than exclusive breastfeeding. However the same pattern is not as visibly evident in the Bastos population. Here the monthly income rates are

varied yet once again the section of the sample group with earnings over 150,000 FCFA has a majority preference for mixed rather than exclusive breastfeeding for the first six months.

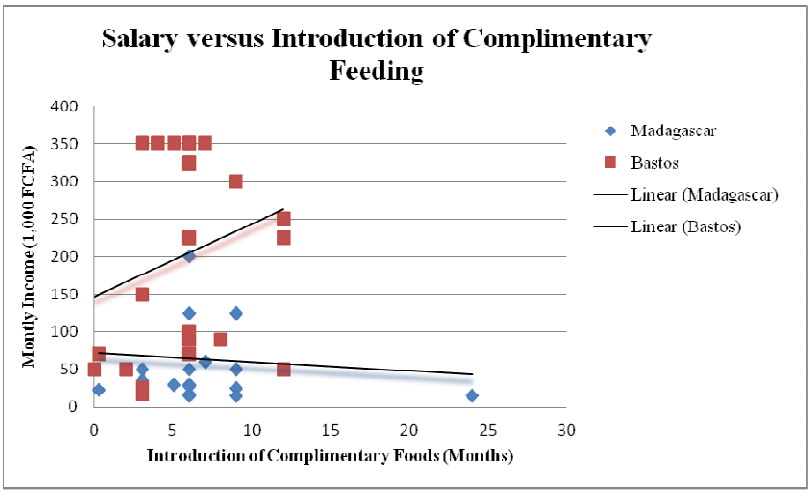


When asked from which sources participants received breastfeeding information (question 7), more women in the Bastos population marked multiple responses in comparison to the Madagascar participants. Major means of acquiring breastfeeding education came from the hospital and family members for both surveyed populations. The chiefs of the quarters were not recognized as a significant resource for any of the surveyed mothers. According to the graph, only the three women of Madagascar marked that no information of breastfeeding was received previously.



For the women who chose to feed breastmilk substitutes within the first six months after birth (question 6), a selection of choices were given. More than one option could be chosen as an alternative form of feeding. The responses are illustrated in the following bar graph for both Madagascar and Bastos. As shown, eleven more women in the Bastos sample groups chose artificial milk as the majority form of breastmilk substitute allocated to infants before the age of six months postnatal. For both populations the "other" category repeatedly consisted of *boullie*, a mixture composed often of rice, corn, macaroni, peanuts, fish, or whichever chosen foods the mother decides to add. Other remarked choices for Bastos included vegetable purée and natural fruit juice while one woman in Madagascar remarked feeding her child minced meat. Water was never formally written in the questionnaire but women spoke of giving their children the fluid during the first six months.

The relation of salary to the introduction of complimentary feeding for the two quarters is generalized in the figure below. According to the data, for Madagascar there is a gradual



downward linear trend as the income decreases on the vertical axis, the number of months increases on the horizontal axis for when the mother introduces complimentary foods. The range is greater starting at two weeks after birth until 24 months. However the linear trend is upward, steep, and condensed for the Bastos surveyed population, ranging from the first week of birth to 12 months postnatal. For both quarters of the sample group, there is a notable trend that mothers introduce complimentary feeding at the recommended six-month time period.

Analysis

My interpretation based on the data obtained from this report and according to the international and national recommendations for optimal breastfeeding practices leads me to believe that the duration and frequency of exclusive breastfeeding could be improved within Cameroon through achievable goals, as remarked in the "Conclusion" section. Approximately 28 percent of the surveyed participants in Bastos and 60 percent in Madagascar claimed to have practiced exclusive breastfeeding for the first six months of life after birth. However in the context of Yaoundé, these findings in Bastos are on par with the city average of 20 percent while the percentage for Madagascar is in actuality relatively high.

There are several factors that are contributing to these numbers. The following sections will identify and examine each of these conditions affecting the collected data of the survey populations.

Participant Projection of Self-Behavioral Habits

Despite the continuous reiteration of my position as a researcher of breastfeeding perceptions and practices within the community, residents would often ask if I worked for the government, a nearby hospital, or a non-governmental organization. On a daily basis, I would receive either health inquiries concerning my medical advice or interest in what rewards participants would receive from the state for contributing to the study. Therefore regardless of the verbal and written statements of purpose throughout my questionnaire and interview process, a number of community members associated me as a formal figure in the quarter, more so in Madagascar than Bastos.

Curiously enough it was also in Madagascar that I witnessed a higher frequency of mothers asserting to have breastfed exclusively for six months postnatal, the advised practice according to the Ministry of Public in correlation to international recommendations by UNICEF, WHO, and other organizations. There were an unidentifiable, yet minimal number of mothers who had claimed to have exclusively breastfed for six months but then would later have to revise their first answer after explaining in question 5 how complimentary food was introduced to the child in the period previous to this time, thus contradicting their initial response.

Other responses in the questionnaire (question 8) stated ideal perceptions of breastfeeding such as, "*L'allaitement maternel est meilleur au rapport à l'artificiel. L'enfant est fort et il grandit très vite*."[22] Similarly another woman in Madagascar wrote, "Breastmilk is the best for the first six months. It's safe. Since the baby is still fragile, you're sure of the hygienic nature. You need to eat well then clean the nipples and the baby will be fine and healthy." Nine mothers stated word-for-word the phrase "breastfeeding is the best" in either French or English for the first sentence of question 8. Every single other questionnaire included some variation of the adjective to describe breastfeeding as either "*très bien*," ideal, rich, important, compliment, necessary, and nutritious.[23] Yet the data illustrating actual practices does not support these sentiments.

As a result, I speculate as to whether the proposed breastfeeding practices in the questionnaires and interviews represent actual habits or rather, reverberation of ideal infant and

[22] Translation from French to English: "Breastfeeding is the best compared to the artificial. The child is strong and he grows quickly."
[23] Translation from French to English: "Very good."

young child nutrition. There is no method for me to check if all answers were accurate other than rephrasing similar questions or approaching the subject from multiple standpoints (such as the relation of question 4C and 5). However I did witness a similar repetition of question and answer during the *Semaine Mondiale de l'Allaitement Maternel (SMAM)*, the 21st edition of the international breastfeeding awareness week in Cameroon. Countrywide the campaign was promoted by the Ministry of Public Health in participation with the Federation of Cameroon Breastfeeding Promotion Associations towards sensitization of breastfeeding. Over 170 countries as well as a number of public health agencies including UNICEF and WHO participated in the celebration this year.[24] The theme for the 2013 edition declared "*Soutenir l'allaitement maternel aux côtés des mères*."[25]

During observations at a class being taught by the midwives of the Yaoundé Gynaeco-Obstetric and Pediatric Hospital (see Appendix for images, Pictures 1-5) during the week of November 8th to 15th, I witnessed how questions would be called out by the hospital staff members and the eager women would compete to answer accurately. Their replies would be studiously adjusted by the class members word-for-word and corrected until considered acceptable. Responses that were satisfactory were rewarded by claps, overwhelming praise, and at times small gifts including tee-shirts promoting breastfeeding. The highly interactive atmosphere was open and supportive as a learning environment yet each mother, as well as three fathers present, sought the approval of their peers by responding accurately. I had the same sentiments about me as I collected data within the quarters.

Age

The Bastos surveyed residents possessed a 16 percent higher amount of mothers over the age of 43 years in comparison to the Madagascar sample group. I believe that the overall older population in Bastos is interrelated to the higher paying professions commonly found among these women. The elder mothers of this area are in a different phase of their life where they are more established and thus can afford to live more comfortably in such a lavish area as Bastos. In contrast, the younger women of Madagascar tend to be new mothers who are struggling to pay

[24] *Semaine Mondiale de L'Allaitement Maternel 2013*. Ministry of Public Health, World Health Organization, and UNICEF.
[25] Translation from French to English: "Protect breastfeeding alongside mothers."

daily costs of living. Thus, the lower income housing of Madagascar is more financially sensible in relation to the local realities of these mothers.

When comparing age to practices of breastfeeding, there is no true indicator when comparing the two sets of data for Madagascar and Bastos. The collected information illustrates that it is the relatively older, majority generation of the 35-42 age range in the Madagascar surveyed population who possesses the highest percentage of exclusive breastfeeding at 89 percent. However, in contrast, the 35-42 year group for Bastos has the one individual who did not breastfeed at all after the allocation of colostrum. The Bastos population that has the highest percentage of exclusive breastfeeding is within the relatively younger, minority generation of the 17-25 age range at 60 percent. Therefore the only correlation I can assume is that perhaps it is the older generation of Madagascar that is retaining the traditional mode of infant nutrition by breastfeeding, fewer women are convinced to feed alternatives to breastmilk in the first six months postnatal, and/or this age group cannot afford to purchase breastmilk substitutes. On the contrary with Bastos, potentially the younger generations have become well-versed on breastfeeding education and thus, the mothers have sculpted their practices according to these perceptions.

Madagascar will be examined first in relation to the open ended section of the survey (question 8). When women of this age group were asked for their conclusions about exclusive breastfeeding, four of the women discussed the ability of the infant immune system to combat infections with the nutrients and antibodies derived from breastmilk. Only one mother from this group mentioned breastmilk as economically beneficial yet this same participant has a comparatively higher salary within the range of 81,000 to 100,000 FCFA as a nurse, a profession specializing in health. Therefore breastfeeding is not prioritized as an affordable practice but rather a natural one with these selected women. As mentioned by a woman of age 41 living in Madagascar, “I have never given artificial milk to any of my children.…I just know that breastmilk is the best and I should give it to the child for as long as I can and I introduce the child to other foods [afterwards].”[26]

Now looking into the 17-25 year-old mothers surveyed in Bastos, the three women who chose to exclusively breastfeed for the recommended six months work as either a nurse, a

[26] Interview with Justine on November 21st, 2013

student, or in the informal sector through sales while the two who did not practice EBF were either unemployed or also a student. The student who did not breastfeed explained in question 8 that exclusive breastfeeding is essential however, her practices were contradictory. She claimed to have exclusively breastfed for two months but later explained in question 5 that artificial milk was introduced after two weeks. It would appear thus that the breastfeeding habits are linked to education through profession less so than age as seen in these examples.

Profession

When comparing job occupation or primary responsibility, it is clear that women in both populations who are teachers do not exclusively breastfeed for six months. These women could be limited by several factors including the number of months allocated by the workplace for time off and available hours within the home after this period to focus on natal care. Currently this period of rest is only three months for most formal professions in Cameroon, according to the Ministry of Public Health. As reported by the Chief Officer of Dietetics and Nutrition, "*Ainsi contrainte de temps est l'une des raisons de l'introduction de la nutrition précoce mais certaines femmes réussissent encore à prendre soin de leurs bébés. Le code du travail dit que c'est un mois avant la naissance et deux mois après la naissance. Donc, pour pratiquer l'allaitement maternel exclusif, il est difficile pour la mère de passer deux mois avec le bébé ainsi le code du travail est le principal obstacle que certaines femmes à faire face encore à la situation*."[27] Students would most likely have a similar issue of time causing both populations to have identical statistics of 33 percent for exclusive breastfeeding in this category.

For those mothers who remain at the residence as stay at home mothers in Madagascar, the rate of exclusively breastfeeding was the highest of all professions at 83 percent. It is rational to propose that more time in the home allows for increased possibilities to breastfeed. However for the same occupation and proportion of the sample group in Bastos, the results were the complete opposite. Therefore it must be a preference of nutrition for the stay at home mothers who did not exclusively breastfeed in Bastos. When looking at the responses to the questionnaire, the two of the five mothers who preferred mixed feeding stated the importance of

[27] Interview with Marlyte Mahamat on November 25th, 2013: "Thus time constraint is one of the reasons for the introduction of early nutrition but some women still manage to take care of their babies. The labor code says it's a month before the birth and two months after birth. So to practice exclusive breastfeeding, it is difficult for the mother to spend two months with the baby and the Labor Code is the main obstacle that some women still face the situation."

breastmilk but not specifically for exclusive breastfeeding. These two participants who chose not to EBF were also marked as the lowest salary range (15.000-20.000 and 41.000-60.000 FCFA).

It is the civil service category, a group not surveyed in the Madagascar population, which demonstrated the highest rates in this area at 67 percent for exclusive breastfeeding for six months. Both lines of work are concentrated in office environments; yet the two women were able to exclusively breastfeed for at least six months. Each mother explained extensively how EBF provides advantages for the health of the baby towards fortifying the immune system and protecting against maladies. Question 8 responses also mentioned how the practice is economical and benefits the wellbeing of the mother as well. One of these participants was interviewed and she described how sensitization of the topic from healthcare workers influenced her perceptions but the greatest obstacle hindering mothers from exclusively breastfeeding is often "*les responsabilités dans le travail de bureau [et] les maladies*."[28] Thus, the women of this occupation who chose to feed their offspring exclusively with breastmilk did so because of their education on the subject rather than allowing their work to negatively influence their nutritional practices.

Salary

Despite the focus on socioeconomic level gauged by level of income, it was difficult to completely separate the data according to monthly wages. The earnings marked on the questionnaires by the mothers were rough estimates and often varied according to the time of year, for instance when a greater number of hours were worked or products sold to consumers occurred. Also, the number of outliers created a wide range of wages to measure in accordance to breastfeeding habits.

However once the data was roughly coded into seven categories of monthly income, the chart portrayed a tendency for the percentages to increase for mixed rather than exclusive breastfeeding at earnings higher than 150,000 FCFA for both quarters. In contrast, the proportion of women administering solely breastmilk increased for the lower incomes in Madagascar. This trend held true for the 81,000-150,000 FCFA section of the sample group but intriguingly decreased again for the lowest incomes of the mothers in Bastos.

[28] Interview with Rodes on November 30th, 2013: (Translation from French to English) "the responsibilities in office work [and] illnesses"

Therefore I referred to the questionnaires of the highest and lowest incomes for mothers who chose not to EBF in Bastos. One woman of age 53 working in the civil service sector explained that she did not exclusively breastfeeding because she purchased artificial milk from the pharmacy (question 4C). She also explained how breastfeeding is advantageous for the health of the baby as long as the mother properly nourishes herself well; but "*la situation de la femme modern (qui doit travailler) ne lui permet plus de nourrir l'enfant exclusivement du lait maternel*."[29] Thus salary appears to be interrelated to financial accessibility to purchase alternatives to breastmilk if desired but it is not the key factor. As the nursing coordinator explained at the Chantal Biya Foundation at the Central Hospital of Yaoundé, "Today we have women who are working class and they will prefer mixed feeding that is breastfeeding and artificial feeding because they are going out."[30] Rather once again there is an issue of time management due to job occupations causing mothers to choose mixed feeding despite education on optimal practices of infant and young child nutrition.

For the woman of the lowest income who chose mixed feeding practices, substitutes were stated as being introduced at three months. Such alternatives included Cerelac, a mixture of bananas and water, and potatoes. The allocation of Cerelac is worthy to note because it this brand that I have observed continuously on billboards with a smiling toddler placed next to the phrase "*J'adore Cerelac et ça se voit*" in the vicinity of Yaoundé.[31] Other mentioned companies included Nursee, Alma, Grigo, and Nann.[32] Therefore for some women optimal practices may have been sacrificed due to commercial allure and in return, infant and young child nutrition has been compromised.

[29] Questionnaire with a Bastos woman: (Translation from French to English) "the situation of the modern woman (who has to work) does not permit her to nourish her child more through exclusive breastfeeding."
[30] Interview with Monica on November 28th, 2013.
[31] Translation from French to English: "I love Cerelac and it shows!"
[32] Interview with Yvette on November 20th, 2013.

Education

According to the Cameroonian Code, Section II, Article 14:

> "Les autorités sanitaires et les professionnels de la santé à tous les niveaux doivent assurer la promotion, la protection et l'encouragement de l'allaitement au sein, ainsi que le respect des règles édictées par le présent décret." [33]

Therefore it was essential during this project to identify exactly what levels have been providing educational resources to women on the promotion of breastfeeding and how much of this information has been applied by mothers.

A majority of women within the surveyed population demonstrated that the Ministry of Public Health, hospitals, family, television, radio, and/or other educational resources provided information about breastfeeding that influenced self practices. Only three of the women remarked that no previous knowledge about breastmilk nutrition was obtained previous to giving birth. However the definition of what constitutes as education is multifaceted and therefore not reasonable to assume that one source is instruction translates into action.

The most questionable practices stemmed from inability of the breastmilk to flow from the mother to the infant. Women mentioned the allotment of several substitutes to herself and the child rather than discussing proper latching methods or initiating breastfeeding within the first hour after the birth of the child to trigger the continuous production of breastmilk. As a result, only 40 percent of women within Cameroon participate in early breastfeeding.[34] However as informally discussed with women, initially putting the baby to the breast is not always intuitive and even with multiple lactation consultants establishing proper latch can be bewildering for a new mother.

After being asked to name the first form of nourishment given to infant on the day of birth (question 2), one mother of Madagascar explained*, "Avant on donnait de l'eau et du sucre aux bébés mais il n'est plus permit. On donne maintenant une forme de glucose qui est prise*

[33] Décret N° 2005 / 5168 / PM DU 01 Dec. 2005. Portant Réglementation de la Commercialisation des Substituts du Lait Maternel. Translation from French to English: "Health authorities and health professionals at all levels must ensure the promotion, protection and promotion of breastfeeding, as well as compliance with the rules laid down by this Decree."
[34] Interview with Ministry of Public Health on November 25th, 2013.

dans une syringe mais mise dans une cuillère et donne au bébé."[35] She further added this custom is given to the newborn when the colostrum is not emerging and the child is famished. However during this time the digestive tract of the infant is not fully developed and such a practice can damage the inner workings of the immature body.

When specifically discussing what to do in circumstances where breastmilk is not flowing (question 10), another mother from Madagascar stated that she had never experienced such a situation but that "*les gens m'ont conseillé de boire du chocolat chaud, la bière Beaufort parce ce que ca aide à donner le lait maternel*."[36] She believed in the practice and thought the idea as simply mundane. However receiving this information is slightly alarming because an unidentifiable number of women turn to alcohol rather than health care workers to assist with the production of breastmilk. There is truth that "a polysaccharide in the barley used to make beer seems to stimulate prolactin, which helps moms make more milk."[37] Conversely the alcohol is not beneficial and will instead inhibit the production of breastmilk. The practice can bring harm to the newborn due to the present alcohol in the blood system of the nursing mother which will transfer to the infant through the breastmilk. In addition if a woman is unable to naturally breastfeed after employing these remedies, she is expected to feed her child with artificial milk.[38]

Fortunately all women within this study were able to give colostrum and decided to feed their infant with the fluid. However misconceptions about the first-milk as discussed in the interview at the Central Hospital of Yaoundé, "…some women will complain that the yellow milk… the colostrum that comes out is bad and we tell them that it is best because we tell them the milk that comes out is full of antibodies that are necessary for the child."[39] Supporting observations witnessed previously in Ngaoundéré confirmed that this stigmatization of colostrum exists, especially when a woman of the mentioned location explained that this milk causes the child to become ill.[40]

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[35] Interview with Sandy on November 22nd, 2013: (Translation French to English) "Before we used to give water and sugar to the babies but now it isn't allowed. We now give a form of glucose which is taken in a syringe but put in a spoon and given to the baby."
[36] Interview with Yolande on November 21st, 2013: (Translation French to English) "…people advised me to drink hot chocolate, Beaufort beer because it helps to give the breastmilk."
[37] BabyCenter, *Is it True that Drinking Beer Increases a Breastfeeding Mom's Milk Supply*, 2013, http://www.babycenter.com/404_is-it-true-that-drinking-beer-increases-a-breastfeeding-moms_10303158.bc (Accessed December 7, 2013).
[38] Ibid.
[39] Interview with Monica at the Chantal Biya Foundation on November 28th, 2013.
[40] Interview with Grace at the Ngaoundéré Regional Hospital on October 30, 2013.

As summarized by Dr. Ejigui of UNICEF:

> "Breastfeeding is very low because in each area, the rural and the urban areas, has unique reasons but for the same results. In the urban areas the women will have the tendency to give breastmilk substitutes and using other products they can buy such as cereals. In the rural areas there a lot of beliefs that stop them from exclusively breastfeeding. Firstly, the women will often think that the colostrum is dirty. Secondly, the women will give water and oil to facilitate digestion…the mothers will add other foods…because they believe that is milk is not enough...It is due to the traditional beliefs and the community influence. When the mother-in-law says that you have to do something, it is done. Therefore, practices do not change from generation to generation."[41]

Conclusion

In reality there is no sole explanation or condition to justify the preferred breastfeeding perceptions and practices within Yaoundé or throughout the country. Every mother is unique in relation to her local reality whether it is according to age, profession, salary, or other context. However women as mothers cannot bear the responsibility of these low rates. There are sociopolitical, economic, and various other discourses at work affecting her available choices and consequential decisions.

In relation to the first hypothesis and research question, it does not appear that marketable pressures to choose breastmilk substitute products are highly influencing women to purchase alternative forms of nutrition. Therefore Cameroon has both the legislation through the creation of the Cameroonian Code in 2005 to prevent the commercialization of breastmilk substitutes and the implementation of these principles in the public sphere. Nevertheless, it does not mean that families are completely impervious to the subconscious appeal of foreign products. There exists a culture among the communities here in Cameroon that appreciates Western goods as luxury items. In addition it is true that those areas, such as the United States, have some of the lowest global rates of general and notably, exclusive breastfeeding.

[41] Interview at UNICEF on November 29th, 2013.

The second hypothesis and research question describing variances in the duration of breastfeeding according to opposing socioeconomic levels remains ambiguous due to the multifaceted and complex circumstances associated with financial status, professions, and correlating living situations. Thus according to the collected data there is an inclination that women with comparatively higher levels of income will tend to administer mixed rather than exclusive breastfeeding due to their job occupations, which permit limited time within the home for natal care.

Therefore according to the surveyed populations, inadequate time allocation is a major obstruction for women trying to apply optimal breastfeeding practices, prominently in regards to exclusive breastfeeding from the ages of 0 to 6 months. The designated three month allowance for rest and nursing is insufficient to the health requirements of both the mother and young child. Thus politics are controlling the biological capacities of mothers to extensively provide breastmilk nutrition to her offspring.

For further investigations, I think it would be beneficial to look further into job responsibilities and the consequential time allotted for working mothers to breastfeed and nourish young children. It would be necessary to speak with the Ministry of Labor and Social Security about Chapter III, Section 84 of the Labor Code to advocate expanding the rest period for mothers to promote natal care before returning to the workplace.

It is highly recommended after conducting this research that the Ministry of Public Health implement community surveying and statistical data collection in each quarter of not only Yaoundé but for all feasible locations nationwide. There were no statistics available from any of the visited organization for the local communities. Thus quantitative data will provide the numbers to illustrate that there are mothers who need to be reached either with breastfeeding guidelines or a course of action. The legislation and the policies of the Cameroonian Code are in place within the state politics, therefore the focus must be towards meeting the demands of the populations hindered from the choice to properly nourish offspring. The role of the government is to increase the livelihoods of the citizens yet that is not possible if their voices are not heard.

Thus UNICEF, WHO, the chiefs of the quarters, and other organizations stationed in the area are advised to provide those mothers with the deserved attention demanded by basic human

rights. Continue to go into the local level and create in-depth connections, qualitative interviews, which will encourage women to take the necessary steps toward promoting potential breastfeeding practices. Over the course of these phases, a database can be shaped through the combination of demographic information in relation to breastfeeding perceptions and practices that can be shared with regional hospitals.

Ultimately, the last recommendation is for the families. Every member of the community has a role in supporting mothers during this crucial period of young child nutrition. For both women and men it is essential to be knowledgeable about the risks artificial milk and other breastmilk substitutes pose to the health of a growing infant. If available, parents are advised to seek lactation consultants or midwives at local health facilities for instruction on proper latching as well as other related information on feeding for the first few years of life. In addition mothers must strive to maintain a balanced, nutritious diet in order to provide the adequate nutrients to the child. As a consequence of these actions, mothers will be well-informed and thus, empowered to decide on best breastfeeding practices according to their local reality rather than cultural restrictions.

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*Questionnaires from fifty participants of Bastos and Madagascar used for all graphs, charts, and other major references throughout the report.

**Interviews:

Bastos Sample Group:

Joyce. 20 November 2013.

Rodes. 30 November 2013.

Yvette. 20 November 2013.

Chantal Biya Foundation at the Central Hospital of Yaoundé:

Monica Nguemtchueng. 28 November 2013.

Madagascar Sample Group:

Justine. 21 November 2013.

Sandy. 22 November 2013.

Yolande. 21 November 2013.

Ministry of Public Health:

Marlyte Mahamat Ngede. 25 November 2013.

Regional Hospital in Ngaoundéré

Grace. 30 October 2013.

United Nations Children's Foundation:

Dr. Jeanne Ejigui. 29 November 2013.

Appendix

Contact Resources

Chantal Biya Foundation at the Yaoundé Central Hospital

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- Helene Atangana, *Major Soins Maternelle*

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Survey Questionnaire

Enquête sur l'allaitement maternel

Je suis une étudiante de santé publique des États-Unis qui étudie pour un semestre avec SIT (*School for International Training*) au Cameroun. Ce questionnaire c'est un aspect essentiel de mon travail sur les pratiques d'allaitement maternel dans les différents quartiers de Yaoundé. Votre participation m'aiderait énormément à mes études. Bien sûr, toutes les réponses que vous donnez et toutes les informations personnelles resteront strictement confidentielles, et c'est garanti par le code de l'éthique de mon institution. Vous pouvez choisir de rester anonyme si vous le souhaitez. Merci pour votre participation! Si vous avez des questions ou des préoccupations, n'hésitez pas à mon contacter à 51.12.23.79.

Bien vouloir répondre aux questions suivantes, s'il vous plaît:

1. Informations personnelles :

Nom : _____

Prénom : _____

Âge : _____

Profession : _____

Quartier à Yaoundé : _____

Tranche salariale mensuelle, s'il vous plaît. Choisir dans cette grille et entourer :

___ Moins de 15.000	___ 41.000 – 60.000	___ 201.000 – 250.000
___ 15.000 – 20.000	___ 61.000 – 80.000	___ 251.000 – 300.000
___ 21.000 – 25.000	___ 81.000 – 100.000	___ 301.000 – 350.000
___ 26.000 – 30.000	___ 101.000 – 150.000	___ Plus que 351.000

2. Listez si vous marié, en couple, ou seul_____

3. Combien d'enfants avez-vous? _____

4. Avez-vous allaité?

___ Oui

___ Non

<table>
<tr><th>Si OUI, bien vouloir répondre aux questions suivantes :</th><th>Si NON, bien vouloir répondre aux questions suivantes :</th></tr>
<tr><td>
A) Combien de vos enfants ont été allaité?
_____

B) Pour chaque enfant allaité, donnez l'âge et la durée de l'allaitement totale:

<table>
<tr><th>Âge</th><th>Durée de temps</th></tr>
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C) Avez-vous allaité exclusivement, dans l'affirmatif pour combien de temps?
_____
_____
_____
_____
_____
_____

D) Avez-vous donné à votre enfant le premier lait de couleur jaune (le colostrum)? Si oui ou non, pourquoi ? Expliquez.
_____
_____
_____
_____
_____
_____
_____
_____
</td><td>
A) Pour quelle raison avez-vous choisi de ne pas allaiter?
_____
_____
_____
_____
_____
_____

B) Comment avez-vous nourrissez votre enfant pendant les six mois après la naissance?
_____
_____
_____
_____
_____
_____
_____
_____
</td></tr>
</table>

Questions générales destinées à tout informateur :

5. Quand avez-vous introduit les aliments dans le régime alimentaire de l'enfant? Quels types d'aliments avez-vous donné à l'enfant

_____
_____
_____
_____

6. Utilisez-vous des préparations pour nourrissons ou autre substitut du lait maternel pendant le premier six mois?

___ Oui

___ Non

Si oui, les quelles ?

___ La lait artificiel ___ La lait de la vache ___ La nourriture de la maison

___ Les céréales ___ L'autre : _____

7. Avez-vous reçu des informations sur les pratiques d'allaitement?

___ Oui

___ Non

Si oui, les quelles ?

___ La radio ___ La télévision ___ La famille ___ Le chef de quartier

___ L'hôpital ___ Les voisines ___ Le Ministre de la Santé Publique

___ L'autre : _____

8. Quelle sont vos opinions et conclusions au sujet de l'allaitement maternel exclusif et substituts du lait maternel?

_____
_____
_____
_____

Interview questions

Mothers

Je voudrais aborder avec vous vos connaissances et pratiques sur l'allaitement maternel. Je suis très intéressée par vos opinions et je voudrais que vous vous sentiez à l'aise pour expliquer vos impressions et vos opinions. Je vais vous poser des questions sur les définitions, les préférences, et d'autres sujets concernant l'allaitement maternel dans votre quartier et chez vous. Vous n'avez pas besoin de répondre à toutes les questions, mais j'aimerai entendre vos réponses afin que je puisse apprendre de vous et avoir vos expériences. Si vous êtes d'accord, je vais utiliser un enregistreur vocal. Il va m'aider à écouter les mots que je ne comprends pas. Bien sûr, toutes les réponses que vous allez donner et les informations personnelles resteront strictement confidentielles, et c'est garanti par le code de l'éthique de mon institution.*

Puis-je commencer les questions maintenant ? Êtes-vous prêt? Si vous l'êtes, dites OUI...

---

1. **Qu'est-ce que vous avez donné à l'enfant comme nourriture à partir de la naissance ?**[42]
   (What have you given to the child for food since birth?)

2. **Combien de temps après la naissance est-ce que vous avez commencé à donner le sein ? Quelle est la première chose que vous donnez à l'enfant à manger le jour de la naissance?**[43]
   (How long after birth did you start giving the breast? What is the first thing you gave to the baby to eat the day of birth?)

3. **Pourquoi est-ce qu'on donne le lait maternel ? Qu'est-ce que le lait donne à l'enfant ?**[44]
   (Why do we give breastmilk? What does milk give to the child?)

4. **Quelle information avez-vous reçu de l'allaitement des professionnels de santé? De la famille ?**
   (What information did you receive about breastfeeding from health professionals? From family?)
   - **Quelle est votre définition d'allaitement maternel exclusif ?**
     (What is your definition of exclusive breastfeeding?)
   - **Y-a-t-il une différence entre l'allaitement maternel exclusif et l'allaitement mixte?**
     (Is there a difference between exclusive breastfeeding and mixed breastfeeding?)
   - **Comment avez-vous appris à mettre le bébé au sein ? Qui vous l'a dit ?**
     (How did you learn to attach the infant to the breast? Who told you this?)

[42] Diane Bolton. *Breastfeeding Perceptions and Practices: Cameroon.* Yaoundé, 1996.
[43] Ibid.
[44] Ibid.

5. **Quel est votre plus haut niveau d'étude?**
   (What is your highest level of formal education?)

6. **Y-a-t-il des campagnes locales qui ont parlé des pratiques d'allaitement?**
   (Are there local campaigns that spoke about breastfeeding?)

7. **Quel l'hôpital choisissez-vous habituellement pour avoir des informations sur vos enfants ?**
   (Which hospital do you usually choose for information about your children?)

8. **Que savez-vous sur le premier lait produit qui est de couleur jaune (le colostrum)?**
   (What do you know about the first milk that is produced of the color yellow – colostrum?)

9. **Quel âge pensez-vous qu'il est acceptable d'introduire d'autres aliments ou des boissons pour les jeunes enfants?**
   (What age do you think is acceptable to introduce other foods or drinks for young children?)

10. **Pensez-vous qu'il peut y avoir des situations où la mère ne peut pas allaiter?**
    (Do you think there may be situations when a mother cannot breastfeed?)
    - **Que voulez-vous faire pour surmonter une telle situation**? **(ex. demander des conseils ou utiliser des substituts du lait maternel)**
      (What would you do to overcome such situation?)
    - **Pour quelle raison pensez-vous que ces difficultés peuvent survenir**?
      (For what reasons do you think such difficulties can happen?)

11. **Quelles sont vos opinions sur les préparations pour nourrissons?**
    (What are your opinions on infant formula?)
    - **Quel est le prix de formule infantile d'habitude?**
      (What is the usual price of infant formula?)
    - **Pensez-vous qu'il un prix élevé pour tout le monde ou seulement pour certains groupes de personnes?**
      (Do you think it is a high price for everyone or only for some groups of people?)
    - **Si jamais vous avez décidé d'utiliser les préparations pour nourrissons, les préparations pour nourrissons qui préférez-vous utiliser? Pourquoi?**
      (If you use infant formula, which infant formula do you prefer to use? Why?)

12. **Si votre bébé pleure au milieu de la nuit, que faites-vous? (Allaiter, formule, pas présent dans la nuit, laissez le bébé continue etc.)**
    (If your baby cries in the middle of the night, what do you do?)

13. **Qui a influencé vos pratiques d'allaiter?**
    (Who influenced your breastfeeding practices?)

14. **Connaissez-vous tous les risques liés à l'alimentation d'un bébé avec des préparations pour nourrissons ou d'autres substituts du lait maternel pendant les six premiers mois?**
    (Do you know of all the risks linked from feeding a baby with infant formula or other breastmilk substitutes in the first six months?)

15. **Avez-vous remarqué une différence entre les enfants qui ont été allaités exclusivement et les enfants qui ne sont pas?**
    (Have you noticed a difference between children who were exclusively breastfeed and children who were not?)

16. **À votre avis, quel est le plus grand obstacle qui empêche les femmes de pratiquer l'allaitement maternel précoce et exclusif?**
    (In your opinion, what is the biggest obstacle that prevents women from practicing early and exclusive breastfeeding?)

17. **Est-ce qu'il y a autre chose que vous voudriez ajouter? ****
    (Is there anything else you would like to add?)

* Similar introduction for each of the following interviews

**This question was repeated at the end of each discussion

Ministry of Public Health

1. **Quelles sont les formes d'éducation disponible pour les femmes sur l'allaitement ?**
   (What forms of education are available for women about breastfeeding?)

2. **Quelles campagnes publiques le Ministère de la Santé Publique a mis en œuvre au Cameroun pour promouvoir des pratiques d'allaitement maternel dans la dernière année ? Dans le passé?**
   (What public campaigns has the Ministry of Public Health implemented in Cameroon to promote breastfeeding practices within the last year? In the past?)

3. **Y a t-il actuellement des projets locaux pour la promotion de l'allaitement maternel en cours à Yaoundé ?**
   (Are currently there any local projects for the promotion of breastfeeding underway in Yaoundé?)

4. **Quelles sont les organisations internationales qui travaillent avec le Ministère de la Santé Publique pour promouvoir la santé maternelle et infantile, comme les pratiques d'allaitement?**
   (What international organizations work with the Ministry of Public to promote maternal and child health, such as breastfeeding practices?)

5. **Y a t-il une différence entre les projets de santé communautaires et nationales?**
   (Is there a difference between community and national health projects?)

6. **Quel sont le pourcentage des fonds nationaux dédié à la promotion des pratiques d'allaitement?**
   (What percentage of national funds is dedicated to the promotion of breastfeeding practices?)

7. **Quelle est la priorité de ce sujet par rapport à d'autres sujets de santé publique?**
   (What is the priority of this subject in relation to other public health topics?)

8. **En général, est-ce que l'allaitement maternel est un problème au Cameroun et le statut de ce sujet a changé à travers le temps?**
   (In general how much is this subject an issue in Cameroon and has the status of this topic changed through time?)

9. **Avez-vous entendu du Code International de Commercialisation des Substituts du Lait Maternel? Si oui, qu'est-ce que le Ministère de la Santé Publique fait pour adhérer à ces recommandations?**
   (Have you heard of the International Code of Marketing of Breastmilk Substitutes? If so what does the Ministry of Public Health do to adhere to these recommendations?)

10. **Quelle sont les termes de définitions sur l'allaitement maternel qui proviennent dans les documents nationaux du Ministère de la Santé Publique?**
    (What are the terms and definitions used about breastfeeding come from in the national documents from the Ministry of Public Health?)

11. **Avez-vous des statistiques nationales sur les pratiques d'allaitement maternel? Avez-vous des statistiques pour les quartiers spécifiques de Yaoundé?**
    (Do you have any statistical data nationally on breastfeeding practices? Do you have any statistical data for the specific quarters of Yaoundé?)

<u>UNICEF</u>

1. **Quel est le rôle de l'UNICEF dans la santé infantile et maternelle en ce qui concerne l'allaitement maternel?**
   (What is the role of UNICEF in child and maternal health concerning breastfeeding?)

2. **Quel type de campagnes publiques, des projets, et d'autres formes d'éducation sont présentés par cet organisme pour la population camerounaise, précisément à Yaoundé?**
   (What type of public campaigns, projects, and other forms of education are being presented by this organization to the Cameroonian population, specifically in Yaoundé?)

3. **Y a t-il actuellement des projets locaux pour la promotion de l'allaitement maternel en cours à Yaoundé ?**

(Are currently there any local projects for the promotion of breastfeeding underway in Yaoundé?)

4. **Quelle est l'origine des termes, le vocabulaire et les définitions que l'on trouve dans les documents de l'UNICEF?**
   (Where were the terms, vocabulary, and definitions derived from which are found within UNICEF documents?)

5. **Quels sont les fonds de l'UNICEF dédiés à la promotion de l'allaitement maternel?**
   (What are the funds dedicated by UNICEF to the promotion of breastfeeding practices?)

6. **Quelle est la place de ce sujet par rapport à d'autres sujets de santé publique?**
   (What is the priority of this subject in relation to other public health topics?)

7. **En général, est-ce que l'allaitement maternel est un problème au Cameroun ?**
   - La politique de ce sujet a telle changé avec le temps?
   (In general how much is this subject an issue in Cameroon? Have the policies of this topic changed through time?)

8. **À votre avis, quels sont les facteurs généraux pour lesquelles les femmes utilisent l'allaitement maternel? De quelles manières est-ce que le statut socio-économique d'une personne et ses autres caractéristiques démographiques contribuent au choix de nourriture?**
   (In your opinion, what are the general factors for which women use breastfeeding? In what way does the socio-economic status or other demographic characteristics contribute to the choice of food?)

9. **Selon votre expérience, est-ce que les habitants des quartiers les plus pauvres utilisent l'allaitement maternel exclusif ou le lait artificiel plus souvent que ceux des quartiers les plus riches?**
   (In your experience, do the inhabitants of the poorer quarters use exclusive breastfeeding or artificial milk more often than the richer quarters?)

10. **Avez-vous des statistiques nationales sur les pratiques d'allaitement maternel? Avez-vous des statistiques pour les quartiers spécifiques de Yaoundé?**
    (Do you have any statistical data nationally on breastfeeding practices? Do you have any statistical data for the specific quarters of Yaoundé?)

<u>Chantal Biya Foundation at the Central Hospital of Yaoundé</u>

1. **Quelles sont les méthodes de l'hôpital pour la promotion de l'allaitement maternel exclusif?**
   (What methods does the hospital use for the promotion of exclusive breastfeeding?)

2. **Combien de temps recommanderiez-vous l'allaitement maternel exclusif?**

(How much time do you recommend for women to use exclusive breastfeeding?)

3. **Pouvez-vous expliquez les facteurs qui influencent la fréquence et la durée de l'allaitement maternel?**
   (Can you explain the factors that influence the frequency and duration of breastfeeding?)

4. **Y a t-il des moments où il est recommandé pour une mère de ne pas allaiter?**
   (Are there times when it is recommended for a mother not to breastfeed?)

5. **Si une femme ne peut pas allaiter, qu'est-ce que vous lui dites de faire?**
   (If a woman cannot breastfeed, what do you tell her to do?)

6. **Quelles sont quelques idées fausses que vous avez entendues de femmes sur l'allaitement maternel?**
   (What are some common misconceptions you have heard from women about breastfeeding? - ex. colostrum)

7. **À quel âge recommandez-vous l'introduction de l'eau dans l'alimentation de l'enfant? Qu'en est-il de la nourriture?**
   (At what age do you recommend that water should be introduced into the diet of the infant? What about food?)

8. **À votre avis, quels sont les facteurs généraux pour lesquelles les femmes utilisent l'allaitement maternel? De quelles manières est-ce que le statut socio-économique d'une personne et ses autres caractéristiques démographiques qui contribuent au choix de nourriture?**
   (In your opinion, what are the general factors for which women use breastfeeding? In what way does the socio-economic status or other demographic characteristics contribute to the choice of food?)

9. **Selon votre expérience, est-ce que les habitants des quartiers les plus pauvres utilisent l'allaitement maternel exclusif ou le lait artificiel plus souvent que ceux des quartiers les plus riches?**
   (In your experience, do the inhabitants of the poorer quarters use exclusive breastfeeding or artificial milk more often than the richer quarters?)

10. **Quelles différences avez-vous remarqué en particulier pour les mères de Bastos et Madagascar?**
    (What differences have you noticed specifically for the mothers of Bastos and Madagascar?)

11. **À ton avis, quelle est l'efficacité des campagnes publiques pour la promotion de l'allaitement maternel ?**
    (In your opinion, what is the efficiency of public campaigns towards the promotion of breastfeeding?)

12. **Avez-vous des statistiques démographiques sur la prévalence de femmes qui utilisent l'allaitement maternel à Yaoundé, dans les différents quartiers?**
(Do you have demographic statistics on the prevalence of women who use breastfeeding in Yaoundé, in the different quarters?)

13. **Que diriez-vous de la prévalence générale l'allaitement maternel à Yaoundé dans la dernière année?**
(What would you say is the general prevalence of breastfeeding in Yaoundé in the last year?)

Pictures

1. 

2. 

3. 

4. 

5.